

# **REDUNDANT INERTIAL FLIGHT CONTROL ASSEMBLY**

- **Single Package System for Launch Vehicles**
- **Multiple Delta II Launches**
- **High Reliability - Low Cost**
- **Triple Redundancy - No Single Failure Point**
- **Fail-Operate/Fail Safe Design**

**Electronic Systems  
Guidance & Control  
Systems**

**Trihex™**

*Cost Effective  
Solutions For Fault  
Tolerant Launch  
Vehicle GN&C*

**AlliedSignal**  
AEROSPACE

**REDUNDANT  
INERTIAL FLIGHT  
CONTROL  
ASSEMBLY**



Defense & Space Systems  
Teterboro, New Jersey

FOR MORE INFORMATION PLEASE CONTACT  
PAUL MAKUS, BUSINESS DEVELOPMENT  
MANAGER, AT 201-393-3060

# **HIGH PERFORMANCE GYRO ASSEMBLY AND REACTION WHEEL FOR SPACE**

- **TGA-20 Ring Laser Gyro Assembly Designed for Remote Sensing Applications**
- **Uses High-Performance RL-20 Gyros**
- **RL-20 Gyros also used on Redundant Inertial Flight Control Assembly for Delta II**
- **RWA-20 Reaction Wheels Designed for High Torque/Low Induced Vibration**
- **TGA-20 and RWA-20 will be used on Commercial 1 Meter Remote Sensing Programs**



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## TGA-20 Ring Laser Gyro Assembly



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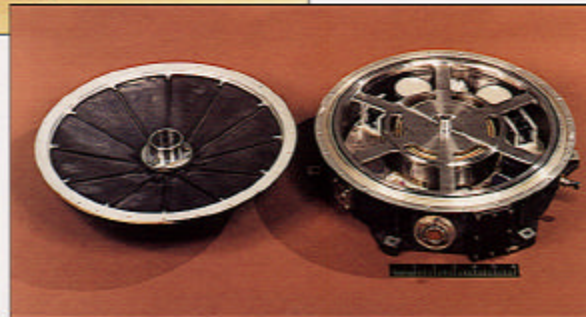
**Electronic Systems  
Guidance & Control  
Systems**

**High Torque  
Reaction Wheel  
Assembly**



*Reaction Wheel  
Assemblies - High  
Reliability At Low  
Cost*

## **HIGH TORQUE REACTION WHEEL ASSEMBLY**



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# SPACE QUALIFIED LOW COST GYRO AND MOMENTUM WHEEL ASSEMBLIES

- **Industry Record 117 Ring Laser Gyros Launched in 1997**
- **Delta II Launched First 5 of 66 IRIDIUM™ Satellites**
  - Delta II Guided using 6 AlliedSignal RL-20 Gyros
  - Each IRIDIUM™ Satellite has an AlliedSignal TGA-14 with TRIAD of RL-14 Gyros
  - Each IRIDIUM™ Satellite has an AlliedSignal MWA-50 Momentum Wheel
- **39 IRIDIUM™ Satellites now in Orbit Successfully**

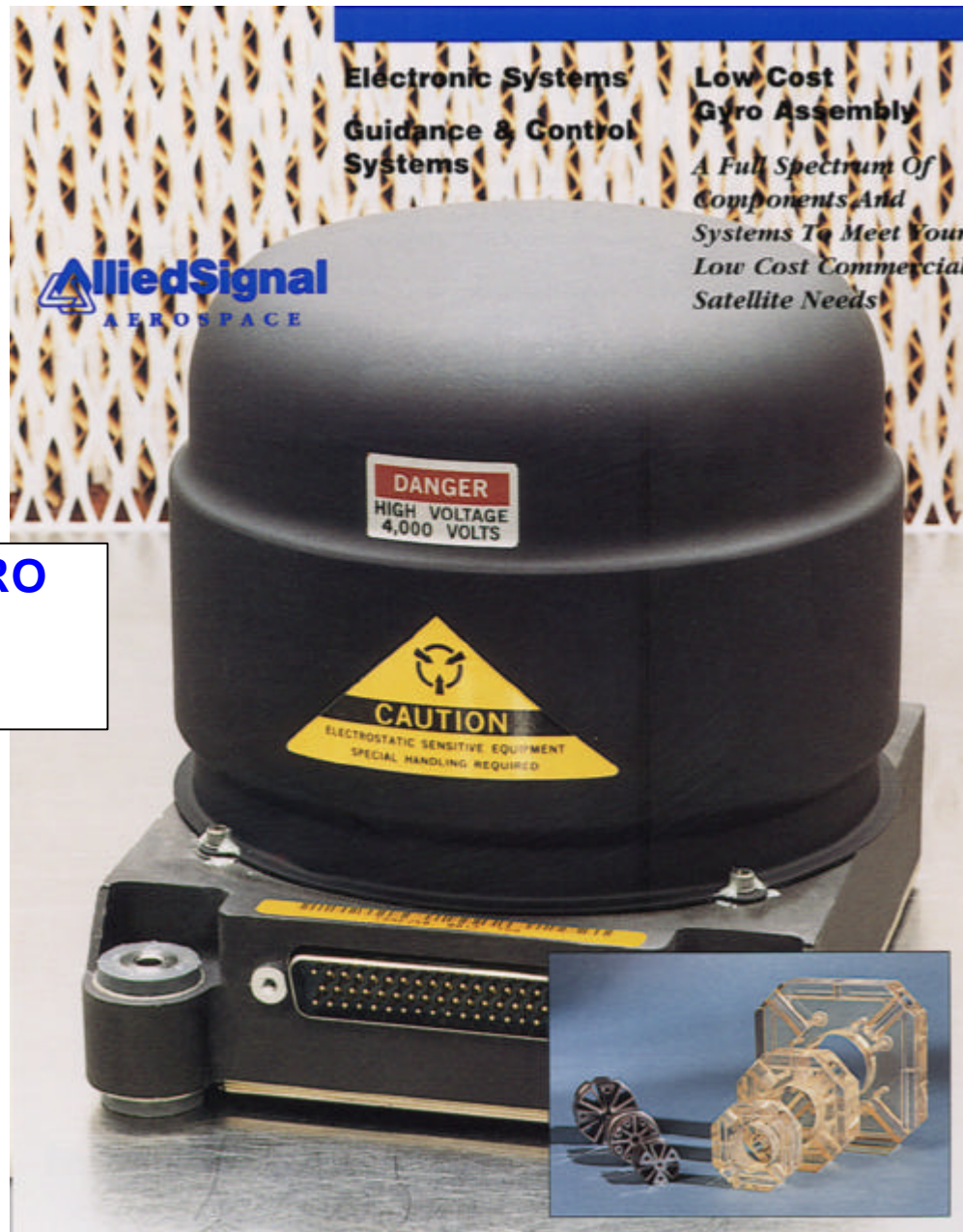
**Electronic Systems  
Guidance & Control  
Systems**

**Low Cost  
Gyro Assembly**

*A Full Spectrum Of  
Components And  
Systems To Meet Your  
Low Cost Commercial  
Satellite Needs*



## LOW COST GYRO ASSEMBLY



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**Electronic Systems  
Guidance & Control  
Systems**

**Low Cost  
Momentum Wheel  
Assembly**

*High Reliability At  
Low Cost*



**LOW COST  
MOMENTUM WHEEL  
ASSEMBLY**



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